

**GAMING MACHINE WITH EXTENDED PAYLINE & N-SIDED ELEMENTS**

The present invention relates to gaming machines and, more particularly to a game played on gaming machines having at least one electronic display in the form of a  
5 matrix simulating a plurality of spinning reels. In particular forms the matrix includes N-sided elements where N is an integer other than 4.

**BACKGROUND**

10 Gaming or poker machines have become a major source of amusement and diversion in such places as clubs, hotels and casinos in many parts of the world.

Traditionally such machines were mechanical devices where a number of reels marked with a plurality of numbers  
15 or symbols could be made to spin randomly by the application of some mechanical input. If the subsequent patterns of numbers or symbols displayed on the reels, when these returned to a rest state, corresponded to predetermined patterns, the machine would provide a prize  
20 or payout. Generally such gaming machines have come to be regulated by government authorities as to their number and in the manner in which the machines must return a percentage of the monetary turnover to the players.

The introduction of electronics, computers and  
25 electronic graphical displays, has allowed a continual increase in the complexity and variations of gaming

machines and games while maintaining the basic concept of the traditional machine.

Machines and games that offer novel and stimulating variations on the basic game theme and environment are  
5 eagerly sought by the gaming industry and there is consequently intense competition between machine manufacturers to innovate.

Nevertheless the repetitive playing of even modern gaming machines can lead to boredom of the players with a  
10 consequent under-utilization of machines and increase in player dissatisfaction.

It is an object of the present invention to offer a variation which may ameliorate the above disadvantages.

## 15 **BRIEF DESCRIPTION OF INVENTION**

Accordingly, in one broad form of the invention, there is provided a gaming machine for the playing of a game of chance wherein an outcome of said game of chance is determined by a predefined one of a plurality of payline  
20 patterns of indicia displayed on a display means by a game control module; said payline patterns formed of a selection of elements of a matrix of columns and rows and wherein the number of said elements forming any one payline pattern is greater than the number of columns of said matrix.

Preferably said columns of said matrix are in the form of simulated reels divided peripherally into a plurality of elements; each said element displaying an indicia.

Preferably said rows of said matrix are comprised of a  
5 number of displayed aligned elements of each of said reels.

Preferably the number of said reels is five and the number of said rows is three.

Preferably said simulated reels are caused to display a spinning motion during a game; said reels coming to rest  
10 in a randomly selected position under control of said game control module so as to display three elements of each reel.

Preferably the number of said elements defining said predefined one of a plurality of payline patterns is one  
15 greater than said number of columns.

Preferably the number of said elements defining said predefined one of said plurality of payline patterns lies in the range of one greater than said number of columns and the total of said elements in said matrix.

20 Preferably said plurality of payline patterns is indicated to a player of said gaming machine by representations of said payline patterns on a front panel of said gaming machine.

Preferably said game control module randomly selects a payline pattern from said plurality of payline patterns for each game played on said gaming machine.

Preferably said game control module randomly selects a  
5 payline pattern from said plurality of payline patterns;  
said payline pattern maintained as a winning pattern until  
matched by a game played on said gaming machine.

Preferably said selected payline pattern is indicated  
to a player of said game when said reels have come to rest  
10 by highlighting said elements corresponding to said  
selected payline pattern.

Preferably said selected payline pattern is indicated  
to a player of said game when said reels have come to rest  
by a projected outline of said elements corresponding to  
15 said selected payline pattern.

Preferably said projected outline is displayed on said  
display while said reels are spinning.

Preferably a player of a game may pre-select a payline  
pattern and wherein, if said payline pattern matches a  
20 pattern of indicia of said reels when come to rest, said  
player is awarded a prize.

Preferably said selected payline pattern of elements  
is arranged so that in one column and one column only, at

least two elements of said selected payline pattern have a common edge.

Preferably said selected payline pattern of elements is arranged so that in one row and one row only, at least  
5 two elements of said selected payline pattern have a common edge.

Preferably said selected payline pattern of elements is arranged so that none of said elements have a common edge.

10 Preferably said selected payline pattern of elements is arranged so that all of said elements have at least one edge common with another one of said elements.

Preferably said gaming machine is provided in addition to said display means with a secondary display means; said  
15 secondary display means adapted to the playing of a bonus game.

Preferably at least one bonus game is conferred on a player of said gaming machine in the event of a winning outcome display of a main game on said display means.

20 Preferably said gaming machine is one of a plurality of linked gaming machines interactively linked to a jackpot system.

Preferably a jackpot prize is awarded by said jackpot system when play of a game on one of said gaming machines results in a pattern of indicia matching a pre-selected payline pattern.

5       Accordingly, in a further broad form of the invention, there is provided a method for the awarding of a prize to a player of a gaming machine provided with a display of indicia-bearing reels; said method including the steps of:

- 10           (a) selecting at random one of a plurality of predefined payline patterns,
- (b) spinning said reels and causing said reels to stop so as to display a matrix of elements,
- (c) comparing said display of a matrix of elements with selected random one of said predefined  
15           payline patterns,
- (d) awarding a prize according if selected random one of said predefined payline patterns corresponds to an at-rest disposition of said indicia-bearing reels.

20       Preferably said predefined payline pattern comprises a number of selected locations and indicia at least one greater than the number of said reels.

Accordingly, in a further broad form of the invention, there is provided a method of awarding a jackpot prize to the player of a reel-based gaming machine and wherein said gaming machine is one of a linked plurality of gaming  
5 machines; said method including the steps of:

- (a) a game controller of each said gaming machine selecting at random one of a plurality of predefined payline patterns,
- (b) spinning said reels of each said gaming machine  
10 and causing said reels to stop so as to display a matrix of elements,
- (c) comparing said display of a matrix of elements of each of said gaming machines with selected random one of said predefined payline patterns,
- (d) awarding said jackpot prize if selected random  
15 one of said predefined payline patterns corresponds to an at-rest disposition of said indicia-bearing reels of one of said gaming machines.

20 Preferably said jackpot prize increases incrementally according to monitored volume of play on said linked plurality of said gaming machines.

Accordingly, in a further broad form of the invention, there is provided a gaming machine and method of playing a gaming machine as substantially herein described and with reference to the accompanying drawings.

5   **BRIEF DESCRIPTION OF DRAWINGS**

Embodiments of the present invention will now be described with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a gaming machine and  
10 display arrangement according to a preferred embodiment of the invention.

Figures 2 to 16 are diagrammatic representations of patterns of paylines according to preferred embodiments.

Figures 17 and 18 are diagrammatic representations of  
15 means of indicating a particular payline pattern.

Figure 19 is a front view of a gaming machine provided with a main display and a secondary display unit.

Figure 19 is a perspective view of a plurality of gaming machines linked to a jackpot system.

20     Figure 20 is a front view of a plurality of gaming machines linked to a payline selection unit,

Figure 21 is a system of networked, dual monitor gaming machines incorporating bonus games.



Figure 22 illustrates an example of an offset symbol matrix suited for use with alternative embodiments of the present invention; and

Figure 23 illustrates element boundary shapes and  
5 symbols therein usable with the embodiments of any of figures 1 to 21.

#### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Figure 1 is a representation of a gaming machine and  
10 game 10 according to preferred embodiments of the present invention in which an electronic display unit 11 is configured under the control of a game control module (not shown) to display a game of chance for money. Display unit 11 represents a number of spinning reels 13, each reel  
15 comprising a plurality of divisions around the notional reel periphery such that when reels are at rest the display forms a matrix of columns, corresponding in number to the reels, and rows 14 corresponding to the divisions of each reel visible in the display.

20 In the particular preferred embodiment illustrated in figure 1, a 5 reel game in which 3 divisions or elements of each reel are displayed when at rest, that is prior to the commencement of a game and at the end of a game, presents a matrix of 15 elements, each element  
25 corresponding to one of the divisions of a reel.

Each reel 13 displays in each of the reel divisions indicia which may be in the form of letters, numbers or symbols or a combination of these. During a play of a game, the reels are simulated to spin about their notional common  
5 axis, coming to rest as determined by a random number generation process within the game control module. It is the pattern of indicia then displayed within the matrix which determines if any, or which, of a number of offered prizes has been won by a player of the game. This pattern  
10 of indicia is commonly known as a payline.

In the present preferred embodiments of the invention, the payline for at least some of the games played on the machine corresponds to a pattern of indicia in which the number of discrete reel divisions, that is elements of the  
15 matrix, making up a payline is larger than the number of columns (that is reels) and wherein the elements may be configured according to a number of ways. In at least some preferred embodiments of the invention the payline may comprise elements of any number between one greater than  
20 the number of columns and the total number of elements of the matrix. Thus for a five reel and three row displayed matrix the number of elements making up a payline is in the range of six to fifteen. Paylines may consist of elements in a contiguous relationship, either by sharing adjoining  
25 edges or common corners. Alternatively, paylines may be made up of a mixture of contiguous elements and unconnected

elements. In the following preferred embodiments paylines are comprised of one more element than the number of columns or reels, thus for a five reel display a payline is made up of six elements.

5        In a first preferred form of a payline according to the invention, the number of elements making up a winning payline is one greater than the number of columns, and in one and one only of the columns, two elements must have a common edge. Examples of this form of payline may be seen  
10 in figures 2 to 4.

      In a second preferred form of a payline according to the invention, the number of elements making up a pay line is again one more than the number of columns but in this case in one and one only of the rows two elements must have  
15 a common edge. Some examples of this form of payline may be seen in figures 5 to 7.

      In a third preferred form of a payline according to the invention, the number of elements making up a payline is also one more than the number of columns but in this  
20 embodiment none of the elements may have a common edge. Some examples of this form of payline may be seen in figures 8 to 10.

      In a fourth preferred form of a payline according to the invention, the number of elements making up a payline  
25 remains one more than the number of columns but in this embodiment every one of the elements must have a common

edge with at least one other element. Some examples of this form of payline may be seen in figures 11 to 13.

In a fifth preferred form of a payline according to the invention, the number of elements making up a payline  
5 remains one more than the number of columns but in this embodiment none of the elements may have an edge common with any other. Some examples of this form of payline are shown in figures 14 to 16.

The payline pattern for any game is randomly selected  
10 by the game control module from a predefined number of possible payline patterns. These patterns are displayed on one of the front panels of the gaming machine together with the prizes associated with each pattern. The payline patterns as defined above may be the only paylines for  
15 which the gaming machine confers prizes, or they may be additional bonus paylines operating in conjunction with more conventional paylines.

If at the end of a game, after the reels have come to rest, any one of the pre-defined payline patterns can be  
20 formed from the indicia then showing on the display, the display may indicate this for example by flashing those elements making up the pattern of the payline.

In at least one preferred embodiment of the invention, as a game commences, that is as the reels are set into  
25 simulated spinning motion, the payline pattern of divisions randomly selected for the game may be indicated for

example, by an enhanced level of illumination as illustrated in figure 17 or by the projection of the element outlines as illustrated in figure 18. Thus the player is put into a state of anticipation as to whether  
5 the indicia required to complete the payline will come to rest in the indicated elements.

In a further preferred embodiment the reels are first brought to rest, at which point the winning payline, if any is highlighted or its elements outlined.

10 In yet a further preferred embodiment, when a game ends the player is invited to judge if he or she believes any one of a pre-defined number of payline patterns displayed on a front panel of the gaming machine matches the status of the at-rest reel display. By pressing an  
15 appropriate control button on the machine control panel the pattern selected by the player is projected onto the display and if correctly assessed the appropriate prize awarded.

In a further preferred embodiment of the invention a  
20 player may pre-select a payline pattern and cause the selected pattern to be projected onto the matrix. If the pattern of indicia on the reels at rest corresponds to the pre-selected pattern the player may be awarded a special prize.

25 In a further preferred embodiment of the invention as shown in figure 19 a gaming machine 20 is provided with a

secondary display unit 21 as well as the main display unit 22. In this embodiment the main display unit 22 is adapted for play of a main game in which simulated spinning reels determine the configuration of a matrix 23 of elements displaying indicia as described previously above.

In this embodiment also, it is any one of a number of predefined paylines 24 displayed on a front panel of gaming machine 20 which determines the outcome of the main game which may incorporate all the features of the previously described embodiments. In at least one preferred form of this embodiment a payline 25 selected by a player may be prominently displayed on the secondary display unit 21.

A winning outcome of a main game may confer one or more bonus games on a player of the main game. The bonus game or games may be additional main games playable on the main display unit 22 or may be a different form of game playable on the secondary display unit 21.

In yet a further preferred embodiment of the invention as shown in figure 20, a plurality of gaming machines 30 are arranged side by side in a line or arc so as to allow each of the players (not shown) of the machines to view a common jackpot prize display unit 31. Each individual machine 32 is provided with at least a main game display unit 33 configured as previously described to simulate spinning reels during a play of a game, and in which the reels when at rest display a matrix of indicia displaying

elements as a matrix. In this embodiment also, the winning of a main game is determined according to one of a predefined plurality of paylines as described in any of the above embodiments.

5        Each of machines 32 of the embodiment illustrated in figure 20 is electronically linked to a jackpot control module 34 which monitors the volume of play on each of the linked machines and displays an incrementing jackpot value 36 determined according to the combined volume of play on  
10    the linked machines.

      A win of the jackpot prize may be triggered in a number of ways. For example, one or more particular configurations of a payline may be indicated on the front panel of each of the machines as jackpot triggering  
15    paylines. Alternatively, the triggering of the jackpot prize may be dependent on the outcome of a bonus game conferred on the player of a particular machine. In this example, players on adjoining machines may be made aware by means of the common display that a potential triggering of  
20    the jackpot is to commence on the machine offered the bonus game, thus adding interest for all the players.

      In still a further preferred embodiment of the invention as illustrated in figure 21, a plurality of gaming machines 40 are linked to a payline selection unit  
25    41. Individual games on each machine 43 are played as before and are of the form described in the previous

embodiments, that is simulated spinning reels form a matrix of indicia when at rest and winning paylines are defined as specific patterns of elements and indicia within that matrix. However in this preferred embodiment the particular  
5 payline pattern which confers the winning of a prize to a player is selected at random from a selection of possible paylines by the payline selection unit 41. The payline selection unit 41 causes this pattern to be displayed on the secondary display units 42 of each of the linked  
10 machines 43 until one of the machines plays a game which achieves the winning pattern. The payline selection unit then determines a new winning payline pattern and displays the new pattern in the secondary display units 42.

The player of the winning machine may play one or more  
15 bonus games depending on the nature of the prize awarded and may play any such games on the main display unit or as a special game on the secondary display unit. Once any bonus games awarded for play on the secondary display unit are exhausted the display reverts to control by the payline  
20 selection unit to display the current winning payline pattern.

#### **GAMING MACHINE WITH EXTENDED PAYLINE & N-SIDED ELEMENTS**

With reference to Fig. 22 there is illustrated an  
25 alternative matrix of elements formed into, in this instance, four columns 111 and three rows 112A, 112B, 112C.



It will be observed that the previously described matrix 110 remains comprising, in this instance, four virtual reels, each displaying, when stopped, three symbols 113A, 113B, 113C when in a stationary position.

5       Winning combinations of symbols 113A-C can be determined by alignment of symbols. For example, in the case of Fig. 22, paying lines 114 include a substantially horizontal row of symbols 113A within row 112A.

10       It will be observed that, even though the matrix of symbols is not perfectly rectilinear the human eye can, nonetheless, discern alignments of symbols in rows and columns.

      Whilst in the case of Fig. 22 the elements comprise N-sided elements with  $N=4$  it can be envisaged that the N-sided element, as illustrated in Fig. 23, can comprise  
15       different numbers of sides  $N$ . In the simplest case the element comprises a circle ( $N=1$ ). In more complex cases  $N=3$  (triangles), 5 (pentagon), 6 (hexagon), 7 (septagon), 8 (octagon), 9 (nonagon), 10 (decagon), 11, 12, 13, 14  
20       through to at least  $N=20$ .

      The N-sided element 111A can include within its borders of sides a graphical symbol 114, the symbol 114 determining results of games including winning paylines.

      In alternative forms the symbols 114 can be defined by  
25       the sides 115 of element 111A.

In this arrangement, as best seen in Fig. 23, sides 115, 116 are in parallel, spaced apart relationship.

The above describes only some embodiments of the present invention and modifications, obvious to those  
5 skilled in the art, can be made thereto without departing from the scope and spirit of the present invention.